

CLAIM AMENDMENTS

1 1. (currently amended) A recombinant nucleic acid for
2 promoting microbial production of L-serine directly from
3 carbohydrates, by avoiding or at least reducing decomposition of
4 the L-serine to pyruvate and which is capable of replication in a
5 microorganism of the family Corynebacterium said recombinant
6 nucleic acid having comprising at least one serine biosynthesis
7 sequence selected from the group consisting of serA, serB and serC
8 and a nucleotide sequence encoding L-serine dehydratase which is
9 partially ~~or completely~~ deleted or is mutated or fragments of the
10 nucleotide sequence according to SEQ ID NO:1 encoding L-serine
11 dehydratase flanking the 5' end and the 3' end of said nucleotide
12 sequence encoding L-serine dehydratase to permit complete removal
13 of said nucleotide sequence encoding L-serine dehydratase by
14 homologous recombination and which is expressed to a lesser degree
15 than the expression of the naturally occurring L-serine dehydratase
16 having nucleotide sequence of SEQ ID NO: 1 or which is not
17 expressed at all.

1 2. (previously presented) A recombinant nucleic acid
2 according to claim 1, wherein the nucleotide sequence encoding L-
3 serine dehydratase is partially deleted or is mutated and expressed
4 to a lesser extent in comparison with the expression of the
5 naturally occurring sequence of SEQ ID NO: 1 or not expressed at
6 all.

1 3. (previously presented) A recombinant nucleic acid
2 according to claim 2, wherein the nucleotide sequence encoding L-
3 serine dehydratase is a nucleotide sequence according to SEQ ID NO
4 1 whose nucleotides from position 506 to position 918 are
5 completely or partially deleted or are mutated, or an allele
6 functionally equivalent thereto, or a homolog having a sequence
7 complementary to said nucleotide sequence according to SEQ ID NO 1
8 whose nucleotides from position 506 to position 918 are completely
9 or partially deleted or are mutated or a nucleotide sequence
10 hybridizing under stringent conditions with said nucleotide
11 sequence according to SEQ ID NO 1 whose nucleotides from position
12 506 to position 918 are completely or partially deleted or are
13 mutated.

1 4. (previously presented) A recombinant nucleic acid
2 according to claim 1, isolated from a coryneform bacterium.

1 5. (previously presented) A recombinant nucleic acid
2 according to claim 1, isolated from *Corynebacterium* or
3 *Brevibacterium*.

1 6. (previously presented) A recombinant nucleic acid
2 according to claim 1, isolated from *Corynebacterium glutamicum* or
3 *Brevibacterium flavum*.

1 7. (previously presented) A gene structure containing
2 at least one nucleotide sequence according to claim 1 and
3 nucleotide sequences having regulatory sequences operatively linked
4 therewith.

1 8. (previously presented) A vector containing at least
2 one nucleotide sequence or a gene structure according to claim 7
3 and additional nucleotide sequences for selection, for replication
4 in the host cell or for integration in the host cell genome.

9 through 13 (canceled)

1 14. (currently amended) A microorganism having at least
2 one serine biosynthesis sequence selected from the group consisting
3 of serA, serB and serC and [[a]] an endogenous nucleotide sequence
4 which encodes an L-serine dehydratase, which is deleted in whole or
5 in part or is mutated and which is expressed to a reduced extent in
6 comparison with expression of the naturally occurring L-serine
7 dehydratase having nucleotide sequence of SEQ ID NO: 1 or is not
8 expressed at all, so that the endogenous nucleotide sequence
9 encoding L-serine dehydratase no longer encodes a protein with L-
10 serine dehydratase activity.

1 15. (currently amended) A microorganism according to
2 claim 14, wherein the nucleotide sequence which encodes an L-serine
3 dehydratase has [[q]] a nucleotide sequence of SEQ ID NO: 1 which
4 is partially deleted or mutated and is expressed to a reduced
5 extent in comparison with expression of the naturally occurring L-
6 serine dehydratase or is not expressed at all.

1 16. (previously presented) A microorganism containing
2 in a form capable of replication, a nucleic acid according to claim
3 1.

1 17. (currently amended) A microorganism according to
2 claim 14, that [[it]] is a coryneform bacterium.

1 18. (previously presented) A microorganism according to
2 claim 14, belonging to the family of coryneform bacteria or
3 brevibacteria.

1 19. (previously presented) A microorganism according to
2 claim 14, belonging to the family of *Corynebacterium glutamicum* or
3 *Brevibacterium flavum*.

1 20. (previously presented) A probe for identifying
2 and/or isolating genes coding for proteins which participate in the
3 biosynthesis of L-serine and which has a length of 10 to 30 nucleic
4 acids, and which contains a partial sequence of the nucleic acid
5 which encodes an L-serine dehydratase, according to claim 1,
6 serving as a suitable marker for detection of said genes.

21 through 25 (canceled)

1 26. (currently amended) A recombinant nucleic acid for
2 promoting microbial production of L-serine directly from
3 carbohydrates, by avoiding or at least reducing decomposition of
4 the L-serine to pyruvate and which is capable of replication in a
5 microorganism of the family Corynebacterium said recombinant
6 nucleic acid having at least one serine biosynthesis sequence
7 selected from the group consisting of serA, serB and serC and a
8 nucleotide sequence encoding L-serine dehydratase according to SEQ
9 ID NO 1 whose nucleotides from position 506 to position 918 are
10 completely or partially deleted or are mutated and ~~expressed to a~~
11 ~~lesser degree than the expression of the naturally occurring L-~~
12 ~~serine dehydratase having nucleotide sequence of SEQ ID NO: 1 or~~
13 ~~which is not expressed at all~~ such that said sequence no longer
14 encodes a protein having L-serine dehydratase activity.

1 27. (previously presented) The recombinant nucleic acid
2 defined in claim 26 having a nucleotide sequence encoding L-serine
3 dehydratase according to SEQ ID NO 1 whose nucleotides from
4 position 506 to position 918 are completely deleted.

1 28. (New) The recombinant nucleic acid defined in claim 1
2 comprising at least one serine biosynthesis sequence selected from
3 the group consisting of serA, serB and serC and fragments of the
4 nucleotide sequence according to SEQ ID NO:1 encoding L-serine
5 dehydratase flanking the 5' end and the 3' end of said nucleotide
6 sequence encoding L-serine dehydratase to permit complete removal
7 of said nucleotide sequence encoding L-serine dehydratase by
8 homologous recombination and which is not expressed at all.